

Practical research on the use and management of science and technology funds in Colleges and Universities

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Abstract: colleges and universities are places where highly educated talents gather. They have obvious advantages in intellectual resources, so colleges and universities play an important role in the field of scientific research in China. With the development of higher education in China, colleges and universities are undertaking more and more scientific research projects, and their scientific and technological funds are gradually increasing. Therefore, the use and management of science and technology funds in Colleges and universities have become increasingly prominent. The participation of colleges and universities in national scientific research work can improve the teaching quality of colleges and universities. Therefore, it is necessary to use scientific and technological funds reasonably and strengthen the management of scientific and technological funds. This paper analyzes the current situation and existing problems of the use and management of science and technology funds in Colleges and universities, and discusses its solutions.

Key words: University Science and technology funds; Use; Management; practice

Scientific and technological funds are the financial guarantee to ensure the smooth progress of scientific research in Colleges and universities. The rationality of their use and management affects the scientific research results. Improper use of scientific and technological funds will increase the cost of scientific research and cause serious waste of funds. Therefore, colleges and universities need to establish a perfect management system of science and technology funds, and strictly implement the management system of science and technology funds, so as to promote the smooth progress of scientific research in China.

1 The current situation of the application and management of science and technology funds in Colleges and Universities

1. School profile

A university is a key comprehensive university, with 3658 full-time teachers, 1098 professors and 6 academicians. In the University, there are 4 national distinguished professors of the “Thousand Talents Program”, 36 distinguished professors and lecture professors of the “Yangtze River scholars Award Program”, and 26 have won the outstanding youth fund. In addition, there are 7 national famous teachers and 27 distinguished professors and experts in the University. In addition, the university has a relatively complete academic training system, with 28 first-class disciplines and 187 second-class disciplines authorized by the doctoral degree, and 31 post doctoral research stations. There are 38 first-class disciplines and 269 second-class disciplines authorized by the master’s degree. The university has a total of 42 colleges, offering 116 undergraduate majors, including 12 university disciplines. There are 2 national key disciplines of first-class disciplines, including 8 second-class disciplines; There are 14 national key disciplines of secondary disciplines, including 3 national key disciplines and 58 provincial key disciplines. From the perspective of scientific research hardware facilities, universities have four research bases for the research of Humanities and Social Sciences, two national key laboratories, three national engineering laboratories and promotion centers, and a large number of provincial key laboratories and scientific research centers. According to the research of the paper, the University identified a total of 60 scientific and technological achievements in 2015, and obtained 58 awards above the provincial and ministerial levels. In addition, a total of more than 600 applications were filed in 2015, including more than 400 inventions and nearly 200 utility models. In 2014, 15 papers were included in SSIC, more than 2500 papers were included in CSSCI and SCI, and nearly 2000 international papers were cited for more than 6000 times.

2. Use and management system of science and technology funds

In this university, the use and management of science and technology funds adopts the system of “unified leadership, hierarchical management, and responsibility to people”. Science and technology funds are mainly managed by the president, and then the specific division of labor is implemented to each department. Each college, academic research department, finance department, audit department, Discipline Inspection Commission and supervision department respectively implement different science and technology projects and report to the school level leaders, who will guide the science and technology projects. The academic research department mainly manages projects and contracts, and approves the science and technology funds that need to be paid and transferred. The finance department is mainly responsible for the financial management and accounting of science and technology funds, and supervising the use of science and technology funds. The function of the audit office is to formulate the audit system of science and technology funds, and inspect the use of various categories of science and technology research funds, so as to find and correct the existing problems in time. The project leader prepares the budget and final accounts of science and technology funds.

3. Classification of science and technology funds

The science and technology funds of the university are mainly divided into two categories, one is the vertical science and technology funds, and the other is the horizontal science and technology funds. First, the vertical science and technology funds include the science and technology funds approved by various national departments; Science and technology funds approved by various departments and bureaus;

Science and technology funds approved by local government departments; Funds for international scientific and technological cooperation; Project cooperation funds; The science and technology funds and supporting funds involved in the school budget. For example, the fund projects involved in the school's educational reform projects and independent innovation projects. Secondly, the horizontal science and technology funds mainly include the funds involved in various technology contracts signed with other enterprises and organizations in the name of the school; Funds for science and technology donation projects; Funds for international scientific and technological cooperation projects, etc.

4. Income of science and technology funds

Among the 2.86 billion yuan of income of the University in 2015, the total income of scientific research funds was 756million yuan, accounting for 26.43% of the total income. Among them, the incomes of Humanities and Social Sciences projects, various fund projects of natural disciplines, high-tech projects and scientific and technological development projects were 28.65 million yuan, 136.58 million yuan, 368.95 million yuan and 221.82 million yuan respectively. It can be seen that the science and technology funds of the university mainly come from the financial allocation of the state, and the horizontal scientific research funds still have a lot of room to rise.

2 Problems in the use and management of science and technology funds in Colleges and Universities

1. Inaccurate budgeting

The science and technology funds of colleges and universities often appear unreasonable in the process of budgeting. In the budgeting process, the items listed are basically direct costs, but the indirect costs are not accurately reflected. For example, operating expenses, personnel expenses, etc. when budgeting for these expenses, the total amount of funds is usually used as the basis, and the management expenses are calculated according to a certain proportion. For example, in the universities of this paper, the vertical scientific research project is to segment the funding budget of the subject, and use the segmented excess accrual ratio method to complete the extraction of management expenses in one time. In other words, when the budget of the project funds is less than 1million, the management expenses are withdrawn according to the proportion of 8%; When the budget is between 1million yuan and 5million yuan, it will be withdrawn according to the proportion of 5%; When the budget is between 5million and 10million yuan, it will be withdrawn according to the proportion of 2%; When the budget exceeds 10million yuan, it will be withdrawn according to the proportion of 1%, while the proportion of personnel funds will be controlled within the range of 20%. It can be seen that there are obvious irrationalities in the proportion of personnel funds and management costs in this university. If a project leader undertakes multiple scientific research projects at the same time, and these projects can use the same resources, but the same resource expenditures are listed at the time of declaration, it will cause a waste of funds.

2. Lack of standardization in fund management

As the scientific research projects in Colleges and universities are increasing, more and more fixed assets and intangible assets will be purchased by using scientific and technological funds. However, colleges and universities lack perfect management system and management experience of science and technology funds, so the phenomenon of repeated purchase of scientific research equipment is serious, resulting in serious waste of funds. For example, the purchase of intangible assets such as patents and copyrights is simply recorded by the financial department, without a complete account specifically for intangible assets, which makes the valuation of these assets unreasonable and cannot be recorded in time. In addition, the principals of some projects occupy scientific research assets for a long time, and the university does not conduct regular inventory of scientific research assets. The lack of daily management makes the assets easy to be lost.

3. No timely settlement after project completion

There is a common phenomenon that the scientific research projects in Colleges and universities are not settled in time after the completion of the project. Because the research group did not handle the relevant settlement procedures in time after the completion of the project, the surplus funds of the project exist on the book for a long time. Some researchers even use the surplus funds for non project expenditures, resulting in the inability of the school to effectively settle the project funds. Under such circumstances, the school's income and expenditure will be unbalanced, either more idle funds or more wasted funds. In addition, in the research of some horizontal subjects, the school basically pays attention to the research results, but does not pay too much attention to the use of funds. According to the survey of 20 colleges and universities, by the end of 2014, more than 10 colleges and universities had closed nearly 18000 scientific research projects, but they did not settle the accounts according to the regulations, of which the balance of funds was nearly 400million yuan, scattered in the projects that had been closed, and these funds were not effectively used. Among the 50 final projects in the University, more than 50% of the projects have a part of the funds in the book balance.

3 Strategies for solving the problems of the use and management of science and technology funds in Colleges and Universities

1. Strengthen fund management training

In the use and management of science and technology funds in Colleges and universities, the fundamental reason for the existence of various problems is that colleges and universities and researchers' awareness of fund management is not strong. Moreover, each research group is basically not equipped with special fund management personnel. During the research process of the project, the reimbursement procedures of various expenses are basically reported by the members of the research group directly to the financial department of the school. Therefore, in order to strengthen the awareness of fund use and management of researchers, it is necessary to control the non-compliance costs from the source, and training is an important way. For example, the school can hold lectures or training sessions at regular intervals.

The training content is mainly about the use and management of science and technology funds. The school's science and Technology Department, financial department, audit department, and third-party accounting firms should actively participate in the training. Subject researchers should master the relevant management systems and methods of science and technology funds, as well as the matters needing attention in the use and management of science and technology funds, standardize the use and management of science and technology funds by the research group, so as to reduce the occurrence of non-conforming expenses and control unreasonable expense reimbursement. At the same time, strengthening the awareness of the use and management of science and technology funds can also simplify the audit procedure, and there is no need to adjust the expenditure of scientific research funds, so that the school can better implement the internal control system.

2. Improve the budget management system of science and technology funds

The budget management of science and technology funds in Colleges and universities is related to many departments of colleges and universities, involving many matters, which is complex. In budget management, we should not only prepare a reasonable budget and strengthen the management of the budget, but also be able to effectively control and assess the budget. When preparing the budget of science and technology funds, the objectives of researchers and managers need to be consistent. Only when both sides can accept the budget preparation, can they be motivated to actively implement the budget to achieve the budget objectives. If there is information asymmetry in the process of budget preparation, it will affect the rationality of the budget. Therefore, for the science and technology funds of colleges and universities, colleges and universities should implement comprehensive budget management and improve the management system of science and technology funds. For example, to establish an internal budget responsibility center in Colleges and universities and form stakeholders, we should not only clarify the rights and obligations of various departments and individuals, but also clarify their responsibilities, and simulate the operation of the market mechanism among various stakeholders. The budget responsibility center can be subdivided into many sectors, including energy center, data center, experimental test center, etc. When preparing the budget, it should be based on the national special fund management system, and the budget should be within the expenditure scope and standards of relevant budget subjects. At the same time, the preparation of science and technology funds budget should be consistent with the scientific research objectives. Both the total amount of the budget and the expenditure structure of the budget should conform to the laws of scientific research projects.

3. Strengthening the audit supervision of science and technology funds

In order to improve the effectiveness of the use and management of science and technology funds, it is necessary to strengthen the audit and supervision of science and technology funds and evaluate their benefits after use. For example, to formulate the evaluation criteria for the use and management benefits of science and technology funds, the following four items are taken as the evaluation indicators: first, the degree of achievement of the objectives of the scientific research project, comparing the objectives of the project that have been achieved with the objectives at the time of application for project approval, and judging the degree of achievement of the objectives. Second, the level of scientific research achieved, comparing the actual level of scientific research of the subject with the international level, and judging the contribution of the subject in this field. Third, the status and development trend of industrialization of the subject, judge the transformation of scientific research achievements into productivity, so as to predict its contribution to the development of the national economy. Finally, the contribution to the construction of spiritual civilization, that is, the achievements made in the research, the contribution to the construction of spiritual civilization. For example, the contribution made in enhancing the culture, wisdom and knowledge of the society; Contributions made in the development of education, culture, etc.

Conclusion:

To sum up, in the context of the continuous innovation of China's higher education reform, the use and management of science and technology funds in Colleges and universities will affect the research results of scientific research projects and the efficiency of the use of science and technology funds. Therefore, in order to improve the efficiency of the use of science and technology funds in Colleges and universities, it is necessary to strengthen the awareness of fund management of scientific researchers and schools, formulate a perfect budget management system of science and technology funds, and strengthen the audit and supervision of science and technology funds, so as to promote the smooth progress of national scientific research.

References:

- [1] Cuihong, wangyongjun, zhaoyurong, etcThoughts on the management mode of science and technology funds in Colleges and universities [j]Contemporary economy, 2014, (23): 112-113
- [2] LiuzhaoxiangSuggestions on strengthening the management of scientific research funds in Colleges and universities [j]China Economic and trade, 2018 (12): 90-91
- [3] Hu Zhiwei, Zhang JianhuaComparative analysis of allocation structure and use efficiency of science and technology funds in petroleum universities [j] Journal of Liaoning University of engineering and Technology (SOCIAL SCIENCE EDITION), 2014,16 (3): 268-271
- [4] QinkejuanAnalysis of problems in the management and use of collaborative innovation funds in Colleges and universities [j]Assets and finance of administrative institutions, 2020, (7): 42,36
- [5] Yu Fulai follows the journeyResearch on the efficiency evaluation of the supervision of science and technology funds in Colleges and universities [j] Journal of Jilin radio and Television University, 2019 (10): 13-16,19
- [6] Yang Zhengya, Wan Ying, Cuijie, etcPrediction and comparative study on the investment trend of science and technology funds in Colleges and universities [j]Value engineering, 2014, (26): 249-250251

- [7] High power sensitivity Research on the supervision and management mechanism of scientific research funds in Colleges and universities [j] Science and technology wind, 2015, (14): 215-216
- [8] Zhanghongyan Research on the path of improving the supervision efficiency of University Science and technology funds in the new era [j] Science, education and culture, 2017, (15): 4-6
- [9] Liang Dan Research on the problems and Countermeasures of scientific research funds management in Colleges and universities in the new era [j] New Silk Road: mid day, 2021, 000 (001): p.1-2
- [10] Yanlizheng, xiexiaojing Research on Countermeasures of scientific research funds management in Colleges and universities [j] 2022 (4)
- [11] Liulijuan Research on internal control theory and practice of scientific research funds management in Colleges and universities [j] Modern distance education of traditional Chinese medicine in China, 2021, 19 (17): 3
- [12] Yan Hao Research on the use and management of scientific research funds in Colleges and universities [j] Times economic and trade, 2020 (9): 2
- [13] Li Fengkun, buxiaozhi, Chen Xiaoruo Research on audit ideas and methods of scientific research funds in Colleges and universities [j] Audit monthly, 2022 (5): 2
- [14] Liujiliang Research on financial management of scientific research funds in Colleges and universities [j] Journal of Northwest Institute of adult education, 2018 (6): 4
- 15 Qin Kang. Thinking and Research on the reform of the management of scientific research funds in Colleges and universities [j] Journal of China Civil Aviation Flight Academy, 2021, 32 (3): 4

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